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Educational Research Bulletin

STATUS OF PHYSICAL EDUCATION IN OHIO SCHOOLS

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Department of Physical Education
Ohio State University

As a feature of the 1924 Educational Conference at Ohio State University, a physical-education questionnaire was sent to the 244 high schools in the state, located in places having a population of two thousand and more. In preparation for the 1925 conference, an enlarged questionnaire, a copy of which appears later in this article, was sent to the same schools. After the conference a more determined effort was made to procure the desired information from schools which had not replied. A total of 202 checked questionnaires was finally received and tabulated; 33 of these were received in 1924 on the first questionnaire which contained only thirteen questions. These were: 1, 2, 3, 3a, 4, 5, 6, 7d, 8, 8a, 9, 9a, and 11 of the following list:

PHYSICAL-EDUCATION QUESTIONNAIRE

1. Name of school..... .....Ohio
(Town)
   1a. Type of school (please check)
   .....High School
   .....Junior High School
   .....Intermediate School
   .....Elementary School
2. Enrollment—Boys.....Girls.....
3. How many teachers of physical education, not including athletic coaches, do you have? Men.....Women.....
   3a. Are physical-education teachers required to teach other subjects?.....
4. How many athletic coaches do you have? Men.....Women.....
   4a. Do athletic coaches teach other subjects?.....
   4b. Do you employ any part-time coaches? .....
5. Are physical and medical examinations required of all students?.....
   5a. If not, are physical and medical examinations required of athletes?.....
   5b. Does it include more than a heart examination?.....
   5c. How often are these examinations made?.....
   5d. Does the physical examination determine the type of activity in which the student may participate?.....
   5e. Is the examination given by a school physician?.....by a local physician?.....by a teacher?.....
6. Do you have an athletic field?.....or playfield?.....
   6a. Is it adjacent to the school?.....
   6b. Does field include a running track? .....
7. Do you have a gymnasium?.....boys'? .....girls'?.....or one for both? .....
   7a. How many hours per week do girls have use of gymnasium?.....
   7b. Is the gymnasium a part of the school plant?.....
   7c. Do you have additional exercise rooms? .....
   7d. Do you have a swimming pool?.....
8. Is physical education required of all students? .....
   8a. How many years?.....
   8b. How many periods per week?.....
   8c. Length of periods?.....
   8d. Are classes conducted separately for boys and girls?.....
   8e. Is change of costume required for physical-education activities? boys .....and girls.....
9. In what sports do you have interscholastic competition for girls?..... .....

9a. Are these teams coached by men? .....or by women?.....

9b. Do boys' or girls' rules govern basket ball played by the girls?.....

10. In what sports do you have interscholastic competition for boys?.....

.....

10a. Are these teams coached by men? .....by women?.....

11. What percentage of your student body takes part in intramural (interclass) competition?

.....

11a. What sports are used in intramural (interclass) competition?.....

.....

(Signed).....

Director of Physical Education

....

College *Year*

Many of the questionnaires were incompletely filled out so that the total number of "yes" and "no" answers in only one case equalled the total number of questionnaires received. The following percents, unless otherwise stated, are based on the number of affirmative answers from the total number of schools even though the question was not answered in some cases. This may not show the condition quite as it is, but in most cases the school reporting would not leave blank a condition which was present. The proportion of schools having teachers of physical education exclusive of coaches is 52 percent. These are divided as follows: women only, 5 percent; men only, 8 percent; both men and women, 39 percent; physical-education teachers who teach other subjects, 33 percent.

Schools having coaches number 93 percent; men only, 45 percent; both men and women, 48 percent; part-time coaches, 9 percent; coaches teaching other subjects, 66 percent.

The answers show that physical and medical examinations are required of all pupils in 25 percent of the cities and of only athletes in 53 percent. In 46 percent of the schools more than a heart examination is required, and in 31 percent the examination determines the activities to be engaged in. Yearly examinations are required in 30 percent of the schools, each season in 17 percent, each semester in 6 percent, on entrance to school in 4 percent.

Examinations are made by a school physician according to 18 percent of the replies; by a local physician, 42 percent; by a teacher, 6 percent; by county examiner, 4 percent; by physician and teacher, 3 percent.

Sixty-nine percent of the schools report the possession of athletic fields; 24 percent, a play field; while 34 percent state that the field is adjacent to the school, and in 26 percent the field includes a track.

Sixty-one percent of the schools state that they have one gymnasium, and 8 percent, that they have two gymnasiums. Sixty-six percent report that the gymnasium is a part of the school plant, while 7 percent report additional exercise floors. Forty-five percent of the schools tell the definite number of hours that the girls use the gymnasium each week; the average for those reporting is 10½ hours. Swimming pools are had in only 8 percent of the schools reporting.

Physical education is required of all students according to 60 percent of the replies, though 69 percent have gymnasiums, while only 52 percent have instructors of physical education. Sixty-five percent of the schools report the time given to physical education as an average of two periods per week. Fifty-two percent use 45-minute periods and 20 percent, 60-minute periods.

Ninety-four percent of the schools reporting on the item, state that the classes for boys and girls were conducted separately. Sixty percent require change of costume in boys' classes and 78 percent require change for girls.

Sixty-nine percent of the schools mention interscholastic basket ball for girls. Twenty-four percent report track; 7 percent, tennis; 3 percent, swimming; and but one school of the 202, hockey. Of the 139 schools reporting interscholastic competition 30 percent have men coaches for girls, and 70 percent

have women coaches. Girls' rules are used in more than half the schools. Of 169 schools having interscholastic competition for boys, 92 percent report basket ball; 86, football; 71, track; 61, baseball; 10, tennis; and 8, swimming. According to these replies, 40 percent of the student body participate in intramural athletics.

The sports used in intramurals were: basket ball, 79 percent; track, 46 percent; baseball, 33 percent; football, 12 percent; volley ball, 11 percent; tennis, 8 percent; soccer, 3 percent; swimming, 3 percent; hockey, 2 percent; wrestling, 2 percent; handball, 1 percent; and boxing, horseshoes, and cross-country hikes, one school each.

These data may be summarized:

1. With a state law requiring physical training 100 minutes a week it may be questioned whether the work is on a satisfactory plane when so large a proportion of the schools have no physical-education teacher other than a coach, if indeed they have the latter.

2. If physical education and athletics are properly to serve their function they must be based on a thorough physical and medical examination of all the children. The report shows that these activities have not been sufficiently cared for at the present time.

3. An adequate physical-education program can scarcely be carried on without an athletic field adjacent to the building.

4. Change of costume is so important that the number of schools making this requirement is much too low even as compared with available gymnasiums, instructors, and required work.

5. Interscholastic competition for girls should certainly be carried on under girls' rules with the teams coached by trained women.

The forty percent of the student body which participates in intramural athletics is a percent far too low in view of the present trend toward competition for all.

In conclusion, it should be pointed out that in spite of some of the low percents of physical-education programs and activities Ohio is making progress throughout its school system. One evidence is the fine type of new school buildings that are now erected, which include at least one, and in some cases, two, large gymnasiums. Another evidence is that the grounds which are acquired for these large buildings contain sufficient area to permit the development of athletic fields adjacent to the school. The recent appointment of a Commissioner of Athletics for the high schools of the state should assure an improvement in the handling of interscholastic athletics. The need still exists for the appointment of a State Supervisor of Physical Education to carry out the provisions of the Physical Education Law. States other than Ohio are requiring a practical knowledge of physical education for all teachers employed in these states, and this, with the increase of state laws, should assure a universal adoption and practice of efficient, supervised, physical activity and education for every school child.

A UNIVERSAL GRAPH RECORD CARD FOR USE WITH STANDARD TESTS

S. S. BROOKS
Ohio State University

SEVERAL attempts have been made to devise a practical graph record card for recording standardized-test scores which not only could be used with any battery of tests, but would be economical of time and effort, simple and easy to use, and statistically valid. So far the goal has not been satisfactorily achieved.

For several years, while superintendent of a New Hampshire school district, I used an individual graph record card which showed at a glance the grade standing of an individual pupil in all subjects and interpreted test scores in terms of grade progress throughout the year.[1] For my own purposes and used with my selection of tests, it proved a useful and practical device in the elementary school. It was of no value whatever in the high school, for in high school it is not possible to measure all or several grades with the same scale, and hence the individual differences in test results are not graphically interpretable in terms of grade progress. Another item that tended to prevent its wide general use was that in order to be economical of time and effort, such a record card must include a definite list of tests together with the grade norms for those particular tests.

A more refined and complete individual graph record card has recently been devised by Van Scoyck and Young and was described in this *Bulletin*.[2] It is similar to the Brooks card, both in construction and in method of use, and the same defects militate against its general adoption.

An interesting and ingenious attempt to produce a similar type of record, without the names or scores of any test, is represented by Trabue's Educational Achievement Chart.[3] Although this chart may be used with any selection of tests, it is much more cumbersome and time-consuming than either of the others.

The purpose here is to suggest a form of graph record that may be used in either elementary or high school with any test. This card is arranged to show at a glance the standing of either an individual pupil or a whole class in all the subjects tested and is simple enough for general use by classroom teachers. When properly filled out, this card (See Figure I) will show the achievement of a pupil in percents that may designate his standing in relation to grade norms, chronological-age norms, mental-age norms, or percentile rank within his class group.

The procedure used is based on the achievement quotient, A. Q., as defined by Torgerson.[4]

This achievement-quotient technique serves to reduce all test scores to a commensurate percentage basis. According to Torgerson, the achievement quotient is the pupil's point score divided by the grade norm for that test. The quotient is the percent which the pupil's achievement *is* compared with what it *should be* if he were working up to grade standard in the particular subject tested. Suppose for instance that the pupil has made a score of 42 on a test for which the grade norm is a score of 60, then his

$$\text{A. Q.} = \frac{42}{60} = 70.$$

That is, his score is an achievement of 70 percent of the average for his grade. If his score had been 72 instead of 42, his

$$\text{A. Q.} = \frac{72}{60} = 120$$

or 20 percent higher than the grade standard. If his score had been 60, then his

$$\text{A. Q.} = \frac{60}{60} = 100$$

showing that his achievement is exactly at grade level.

This definition of achievement quotient differs considerably from the one most widely known and most generally accepted, the formula for which is

$$\text{A. Q.} = \frac{\text{Educational Age}}{\text{Mental Age}}.$$

[1] Brooks, S. S. *Improving Schools by Standardized Tests*, chap. vi, (Boston, Houghton Mifflin Company, 1922) and "Measuring the Progress of Pupils by Means of Standardized Tests," *Journal of Educational Research*, 4:161-72, October, 1921.

[2] Brooks, S. S. "The Graphic Interpretation of Test Scores," *Educational Research Bulletin*, 4:366-71, November 18, 1925.

[3] Trabue, M. R. "A Graphic Chart for Representing Educational Achievement Scores," *Journal of Educational Research*, 9:411-14, May, 1924.

[4] Torgerson, T. L., "The Efficiency Quotient as a Measure of Achievement," *Journal of Educational Research*, 6:25-32, June, 1922.

I do not propose to discuss just now the relative merits of various concepts of the achievement quotient but intend merely to justify the use of the Torgerson interpretation of the term in connection with the suggested graph record for test scores.

I believe it is well to keep as closely as possible to the raw point scores commensurating test results. These scores are sufficiently subject to error in themselves without subjecting them to complicated statistical manipulations that magnify the errors already present and offer opportunity at every step for new errors to creep in, especially when the calculations are performed by classroom teachers untrained in statistical procedure. The Torgerson achievement quotient demands one simple operation dealing directly with raw scores.

The very simplicity of the operations involved in the Torgerson formula is its strongest recommendation to the busy teacher or principal. It is useless to expect the average classroom teacher to take kindly to any use of tests which involves tedious calculations. Who can blame her? By the time she has taught all day and prepared her lessons for the next, she has little time or energy left. What remaining time she does have is needed for rest and recreation.

The achievement quotient is at least as reliable statistically as any other Q-score. The reliability of any Q-score depends of course upon the reliability of the test itself. The results from a test which correlates less than 90 with itself cannot be depended upon as reliable and hence any scores derived from it are not likely to be reliable, whether expressed as Q-scores or in other terms.

Moreover, the classroom teacher is primarily interested in the grade scores rather than any ratio between the pupil's achievement and his mental ability, in spite of much eminent opinion to the contrary. Judged by the standards set, to what extent is an individual successfully doing the work of *his grade*? As far as promotion is concerned, it makes little difference whether a child in the fifth grade is nine or fifteen years old. The important thing is whether he has accomplished the work of the grade so that he is ready for promotion to the next. A fifteen-year-old pupil in the fifth grade with an I. Q. of 60 may be shown by the formula

$$\text{A. Q.} = \frac{\text{E. A.}}{\text{M. A.}}$$

as working up to 100 percent of his mental capacity but that should not make him eligible for promotion to the sixth grade unless he has accomplished the work of the fifth grade with a fair degree of success. For this reason I favor, for guidance in promotion, the measurement of pupil achievement in terms of grade scores, rather than in terms of age and mental ability.

Comparing the performance of a pupil with a standard grade norm, however, does not give a complete measure of a pupil's work. We need to know the measure of his accomplishment in relation to his ability to accomplish. Such a measure is the efficiency quotient (E. Q.) as Torgerson[1] defines it, for which the formula is:

$$\text{E. Q.} = \frac{\text{A. Q.}}{\text{I. Q.}}$$

The efficiency quotient is the ratio between actual and potential accomplishment. For instance, a pupil gets a score of 72. The standard score for his grade on that particular test is 60. Therefore his

$$\text{A. Q.} = \frac{72}{60} = 120.$$

If the pupil's intelligence quotient is 130, then his

$$\text{E. Q.} = \frac{120}{130} = 92.$$

This means that, although he is working 20 percent above the standard for his

[1] Op. cit., *Journal of Educational Research*, 6:23-32, June, 1922.

grade, he is doing 8 percent poorer work than his excellent mental ability would warrant. But suppose that his score had been 60 and his I. Q., 150. Then

$$\text{A. Q.} = \frac{60}{60} = 100 \text{ and E. Q.} = \frac{100}{150} = 66.6$$

The efficiency quotient is best used as a basis for placing pupils in the proper grade groups rather than as a basis for promotion or non-promotion. It may indicate that something is wrong that needs investigation and adjustment. Because of laziness, lack of interest in his school work, inferior instruction, or some other reason that may be discovered, this pupil is a failure to himself rather than to the school, and the school is failing in its duty to him.

It should be the aim of the teacher to have each child's efficiency quotient equal at least 100. That would mean that each was working approximately at his maximum mental-ability level. Sometimes efficiency quotients may be obtained that considerably exceed 100; in such a case, investigation is again suggested. Efficiency quotients over 100 may be due to one or more of several causes: (1) The grade norms may be too low, because of careless standardization. (2) Pupil may do better work than the average child of his intelligence because innate factors of success, other than abstract intelligence, are functioning strongly. (3) Improper grade placement of pupil may be the cause. (4) Superior instruction and administrative procedure may be the cause. If, upon careful investigation, none of the first three causes is found to be operative, the school may fairly claim credit for the fourth.

In considering the validity of the Torgerson achievement quotient and efficiency quotient as tools for commensurating test scores that are in themselves incommensurable, and as measures of individual achievement, let us take note of the following facts concerning reliable standardized tests:

1. The median intelligence quotient of a large, unselected group tested, is 100.

2. A norm for a standardized test is the median score obtained by testing a large unselected group.

3. Standard grade norms, therefore, represent the performance of pupils with intelligence quotients of 100.[1]

4. Multiplying both terms of a ratio by the same number does not change the ratio. Therefore,

$$\text{A. Q.} = \frac{\text{Pupil's Score}}{\text{Grade Norm}} = \frac{20}{25} \times 4 = \frac{80}{100} = .80.$$

In other terms, any standard-grade norm may be treated as though it were 100 and therefore directly comparable to the median I. Q. = 100.

5. Therefore a pupil's score divided by the grade norm gives the achievement quotient which is a measure of the achievement of the pupil in comparison with the achievement of the average normal pupil with an I. Q. of 100.

6. The achievement quotient divided by the intelligence quotient expresses the efficiency of the pupil in terms of his own intelligence.

$$\text{Efficiency Quotient} = \frac{\text{Pupil's Score}}{\text{Grade Norm}} \div \text{I. Q.} = \frac{\text{A. Q.}}{\text{I. Q.}}$$

This is a measure of the pupil's efficiency.

The proposed Universal Graph Record card is shown in Figure 1. In order to illustrate the use of this card, let us suppose that Frank Smith, a pupil in the ninth grade of Grant Junior High School, has a chronological age of twelve years, three months, and an intelligence quotient of 112. Let us suppose also that all the tests listed on the card were given in this school, and Frank Smith made achievement quotients and efficiency quotients as shown in column 2 of Table I. The names of the tests used are at the top of the card. The numbers at the left represent the achievement ratios ranging from A. Q. = 0 to A. Q. = 160. The same numbers can be used to represent efficiency quotients. The part of the range from 0 to 100 can be used to represent percentile ranks if one so desires to use them. The heavy horizontal line opposite 100 is to designate the normal achievement-quotient, efficiency-quotient, and intelligence-quotient level for the graph. Each vertical line corresponds to a test.

The first vertical line represents an

[1] See Torgerson's article, which offers a good deal of concrete and rather conclusive evidence to this effect.

intelligence test. Frank's I. Q. is 112, so a dot corresponding to an I. Q. of 112 is placed at the proper point on the first vertical test line. The second vertical line represents the Pressey English Test, Capitalization. Frank's achievement quotient on this test is 106, or 6 percent above the norm for his grade. So a dot is placed on the second vertical about half way between the 100 A. Q. line and the 110 A. Q. line to record this fact. His achievement quotient on the Punctuation Test is 85, or 15 percent below the norm for his grade. This is shown by a dot placed half way between the 80 and 90 A. Q. lines on the third vertical line. In like manner the other dots are placed to represent each of the other achievement quotients given in column 2, thus locating all the points on the solid line of the graph shown in Figure 1. This graph displays at a glance, in percentage terms, just how much Frank is above or below the norm for his age in each of the subjects tested. He is obviously strong in mathematics, science, and mechanical ability. He is just as obviously weak in English, history, and Latin. The wise teacher should see to it that Frank devotes more time to English, history, and Latin even though it be at the expense of the subjects in which he is already well above grade standards.

Suppose this is done with the result that, when the tests are given again at the end of the year, Frank's achievement quotients are those shown in column 3 of Table I and are plotted on the broken-line of Figure 1. This shows that he has become stronger in the subjects in which he was decidedly weak and that he has held his own in the subjects in which he was strong at the first testing period. Usually the pupil's own interest in the matter can be aroused when the graph card indicates to him his own educational weakness.

Suppose one wishes to show a pupil's standing in school achievement as related to his general intelligence. If his intelli-

Table I. A Pupil's Test Record on Two Forms of Several Tests Expressed in Achievement and Efficiency Quotients

Subject	Achievement Quotient		Efficiency Quotient	
	Test I	Test II	Test I	Test II
(1)	(2)	(3)	(4)	(5)
English—Capitalization	106	109	95	97
English—Punctuation	85	104	76	93
English—Grammar	80	90	71	80
English—Sentence	87	100	70	90
Mathematics	120	114	107	100
History 1	102	104	91	95
History 2	90	103	80	92
Science—General	110	110	98	98
Science—Reading	120	125	107	111
Science—Biology	115	120	107	107
Latin—Vocabulary	94	102	84	91
Latin—Syntax	83	95	74	85
Latin—Verb Forms	90	105	80	93
Mechanical Aptitudes	105	107	94	95

gence quotient is known this can be readily done. Obtain the efficiency quotient corresponding to each achievement quotient by dividing each A. Q. by the I. Q. This having been done for Frank's achievement quotients, the results are shown in columns 4 and 5 of Table I; column 4 for the first testing period and column 5 for the second. For instance, in column 4 the first

$$\text{E. Q.} = \frac{106}{112} = 95+.$$

The second

$$\text{E. Q.} = \frac{85}{112} = 76+.$$

When the efficiency quotients are plotted for both testing periods the result is a graph similar to Figure 2. The solid-line graph is for the first testing period, and the broken-line graph is for the second testing period. Wherever the graph falls below the norm line of 100 it means that the pupil is not working up to his normal mental capacity in that subject. For instance, the solid-line graph shows that Frank was working from 25 percent to 30 percent below his capacity in three of the phases of English work tested. The broken-line graph shows that he improved considerably in this respect during the interval between the first and second testing periods. In mathematics and science the graphs show that he did better work than the average pupil of his intelligence. This may mean either

A UNIVERSAL GRAPH RECORD CARD

For Use with Standardized Tests S. S. Brooks

Name Frank Smith. Grade IX. School Grant J.H.S. Age Sept. 1st 12-3.

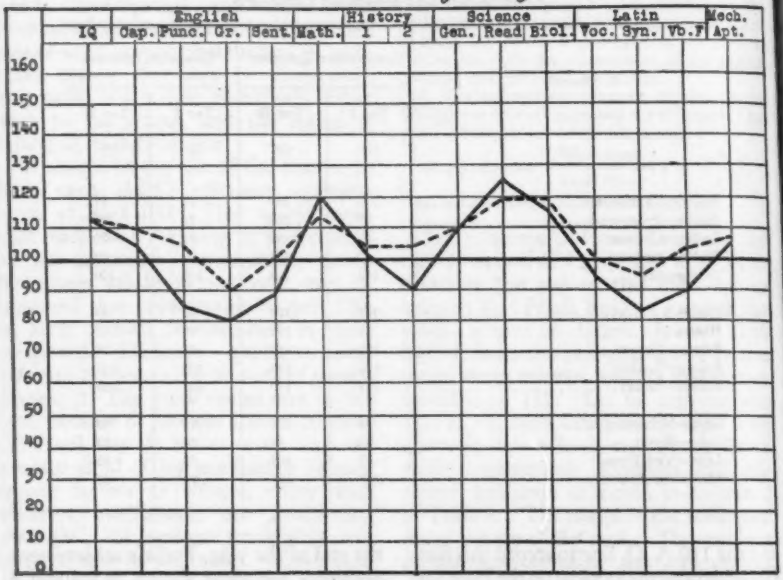

FIGURE 1

that he has superior capacity or greater interest in these particular lines of work, or it may mean greatly superior teaching in these subjects.

If it is desired to plot a pupil's standing in relation to the average achievements of pupils of his age, the same procedure,

of the achievement-quotient formulas but that the resulting graph must be interpreted in terms of the particular formula used.

Percentile ranks may be used with the graph card and in this case the 100 achievement-quotient line becomes the 100-percentile line and the graph will

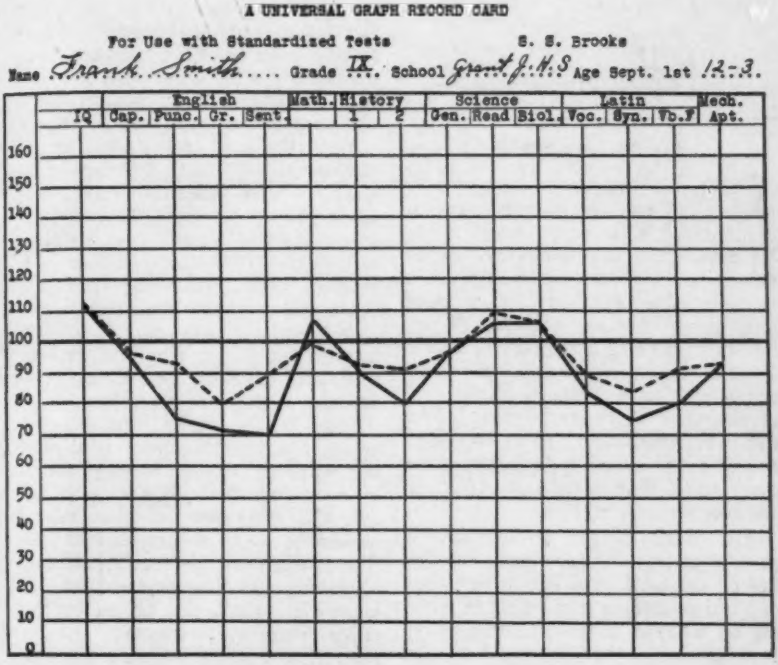

Figure 2

$$A.Q. = \frac{E.A.}{C.A.}$$

may be used. Neither this formula nor the one,

$$A.Q. = \frac{E.A.}{M.A.}$$

can be used with tests for which age norms are not available. It will be noted, however, that the suggested form of graph card can be used with any one

never go above it. Percentile ranks are of little significance in themselves except to show the relative standing of a pupil within his group. One of the best presentations of the percentile-rank technique is given by Otis[1] in his book on educational statistics. Of course the standing of a class as a whole may

(*Continued on page 170*)

[1]Otis, A. S. *Statistical Method in Educational Measurement*. Yonkers, World Book Company, 1925. pp. 95-100.

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TRAINING IN SERVICE

"TWELVE thousand Pennsylvania teachers, to increase their professional training while in service, are taking extension courses." The above quotation is taken from a news item in a recent number of *School Life*. It is of interest not only as a statement of fact but even more as a sign of the times. Twelve thousand teachers represent nearly one-fourth of the teaching force of the state of Pennsylvania. If like data were available for all of the other states of the union some might show even more than one-fourth of their teachers similarly enrolled.

The reason for this activity on the part of teachers is not due simply to higher standards; it is indicative rather of a real awakening to the need of training on the part of the teaching body. It is assisted in part, by the fact that teacher-training institutions are carrying their classrooms to the community in which the teachers are working.

The development of child psychology, the spirit of research which has permeated the classrooms, the deepened sense of responsibility for the guidance of child life have all contributed to this end. A more intimate acquaintance with the laws of learning, especially in their application in actual schoolroom situations, has resulted in a refined technique of teaching. Patrons and school officials are demanding that teachers shall know and utilize this improved technique in the instruction of their pupils. Additional training has become a necessity.

Teacher-training institutions, especially state-supported ones, have recognized the need and have developed a procedure to meet the demand. In many institutions a definite portion of the time of many of the members of the faculty is set apart for extension work. As far as possible an effort is put forth to make extension work parallel that of the campus classroom. Equal preparation on the part of both teacher and students is required. Frequently the teacher's own classroom becomes a laboratory in which the extension lessons are put to test. Such situations may yield even better results than can be secured by the same instructor with his regular university students.

While admitting the need of extension courses and recognizing the excellent quality of much of the instruction, we would express one word of caution. Though it is highly desirable that teachers increase their professional training while in service, it may well be doubted whether all, or any considerable proportion, of that increase should be taken in extension courses. The equipment of the teacher should be something more than mere acquisition of knowledge which can be gained from either books or professors. The business of the school includes the social development of the individual student. In that development the rôle of the teacher as a social being has frequently been overlooked. The teacher needs to know her methods and her subject-matter, but she likewise needs to know human nature. She needs personal contacts more extensive than those furnished by her home community. She needs the benefits of travel as well as that of study. She needs social broadening and the culture which comes from intimate contact with various

points of view. She needs a vision of the purposes of education and of the opportunities of her classroom which can be secured only by seeing people and schools working under varied conditions and with divers objectives.

Extension courses are needed and all educational institutions should provide them. Moreover, our teachers should take advantage of the opportunities offered for training in service. They should, however, not lose sight of the fact that certain phases of their professional development can scarcely be secured in this manner.

E. J. A.

IS THERE A DIFFERENCE BETWEEN THE PROBLEMS OF MEN AND WOMEN TEACHERS?

Harlan C. Koch
Ohio State University

There is a general feeling that more men should be at work in the schoolrooms of the land. Professional educators are not alone in this assumption,[1] for the press occasionally discusses with apprehension the rapidly diminishing number of male teachers. Even the men within the profession are becoming restive; within the past few months, an organization of Ohio men, known as the Ohio Schoolmasters' Club, was organized for the announced purpose of attracting more men to teaching as a vocation. Salary differentials for equal work and training drawn in favor of male teachers indicate that the movement is not a mere gesture. Several investigators[2] have studied existing trends and agree that the situation should be improved. Nor is the shortage confined to America; England is experiencing a similar difficulty.[3]

Why are more men teachers desired? From conversation and from the literature which deals with the question, the writer has been able to glean at least three sorts of reasons, sociological, economic, and administrative. Sociologically, it is argued that boys need the example and influence of virile manhood in the schoolroom;[4] lacking it, they are dropping out because the schools are being feminized.[5] As an economic proposition, it is claimed that men can accomplish more than women because they are stronger physically.[6] The presence of men in the schoolroom adds to the tonus of the school and simplifies the administrative situation. This is possible because of the assumed superiority of men in handling difficult disciplinary problems.

What are the facts in the case? This study does not yield evidence upon each of these points. Pertinent data related to both men and women in their personal relations with the pupils are at hand, however, which throw some light upon certain aspects of the sociological and administrative claims which are being made.

In passing, let us refer to a study by Thorndike.[7] As long ago as 1909 he tested the claim that more men teachers

[1] This is the second of a short series of reports on Project 60.

[2] Stevenson, Dwight H. "Is There a Shortage of Men Teachers?" *Educational Research Bulletin*, 2:182–83; 191–92, June 13, 1923.
Briggs, Thomas H. *The Junior High School*. Boston, Houghton Mifflin Company, 1920. p. 14.

[3] Greaves, F. C. "Men Teachers for Boys," *The London Times, Educational Supplement*, April 26, 1924. p. 180.

[4] Greaves, F. C. Op. cit.

[5] Steen, W. O. "Why Not More Men Teachers?" *The Kansas Teacher*, 18:7–9, February, 1924.

[6] Steen, W. O. Op. cit.

[7] Thorndike, E. L. "The Influence of the Number of Men Teachers upon Enrollment of Boys in Public High Schools," *Educational Review*, 37:71–85, January, 1909.

would exert a wholesome holding power upon boys who were leaving high school and found it to be slight indeed. The testing of the relative success of teachers in any aspect of their work has not constituted a part of this investigation. Whether this can be done, particularly in the field of personal relations, with any assurance of success, is not for us to say. This means, of course, that no definite conclusions can be advanced from the data at hand regarding the comparative abilities of men and women in classroom management. It can be said, however, that the sexes are not different in regard to the recognition of problems, their frequencies, their distribution, and the desire for knowledge of how to solve them.

In Table I, the percents of problems as submitted by both men and women are shown. The widest divergence between the sexes is in the number of inquiries which have to do with methods of conducting the recitation (Column 10). A difference of 2.2 percent is evident here. The only other point at which the women noticeably exceed the men is in regard to extra-curricular activities (Column 5). The men exceed the women at two points. The course of study (Column 2) and physical conditions (Column 3) engage more of their attention. In each case the margin is the same; in all other cases the differences are negligible. On the whole, the individual sex fluctuations are practically equal, since the total excess for men over women is 4.6 percent and for women over men, 4.4 percent.

At those points where large differences might be expected, if one recalls the administrative situations already referred to and represented in Table I by columns 4 and 11, it is seen that they do not occur. Nor do the percents of inquiries differ in regard to the teaching force (Column 8). Is this significant? At least we may conclude that, on this basis, no evident sex difference exists in those school activities which preeminently involve personal relations, either with the students or with other teachers.

A closer analysis which resolves these larger divisions into their component parts reveals minor sex differences which are not otherwise in evidence. Therefore, since much importance is generally attached to the masculine element within

TABLE I. PERCENTS OF PROBLEMS AS SUBMITTED BY MEN AND WOMEN

SEX OF TEACHER	SCHOOL AND CLASSROOM MANAGEMENT				SCHOOL ORGANIZATION				METHOD	
	Course of Study	Physical Conditions	The Pupil	Extra-Curricular Activities	Arrangement of Classes	Special Rooms	Teaching Force	Curriculum	Recitation	The Pupil
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Men	7.1	5.9	37.3	3.9	2.9	5.9	9.7	.7	14.2	12.5
Women	5.4	4.1	37.5	5.6	2.3	5.7	9.3	.9	16.4	12.6
Excess: Men	1.7	1.8	.....	.....	.6	.1	.4	.....	.....	.....
Excess: Women	.....	.....	.2	1.7	.....	.....	.....	.2	2.2	.1

a corps of teachers, let us examine the problems which have to do with pupil conduct.

It is assumed here that the frequency of mention of any problem is, on the whole, an indication of the teacher's perplexity in its solution. If this be valid, the percents in Table II may be accepted as indexes of the relative amounts of trouble experienced by men and women in handling general disciplinary problems. Such overt acts as cheating, lying, stealing, abuse of property, studied defiance, and lack of dependability are found here. Only the most common problems are mentioned in the table, since to include those with smaller frequencies might unduly magnify the importance of small differences.

Table II. Relative Frequencies of Problems Related to the General Attitude of Students as Reported by Teachers of Both Sexes

Item	Percent Males*	Percent Females†
(1)	(2)	(3)
Lack of dependability in personal matters	16.3	15.5
Defiance of authority	10.9	4.8
Cheating	10.2	7.6
Abuse of property	6.8	4.5
Lying	4.7	0.2
Stealing	4.0	2.4
Conduct in halls	3.4	1.0
Obscene or profane language	2.6	2.7

* Based upon 147 problems.
† Based upon 290 problems.

In the first case it is seen that men and women are equally cognizant of such shortcomings as the pupils' failure to provide or to bring to class the necessary equipment, the loss or misplacement of personal belongings and the failure to keep appointments. A similar agreement is noted in the use of obscene or profane language, but in all other matters, this 1 to 1 relationship disappears.

Nothing in the data as submitted accounts for the prominence which men give to the remaining categories of behavior. Whether such conduct is particularly reprehensible to men and thereby acquires, for them, a peculiar significance cannot be said; nor does one know whether there are certain qualities in the male make-up which tend to call forth these specific pupil behaviors. These are psychological questions and, as such, exceed the limitations of this examination. By applying our basic assumption as a criterion where differences have been found, we conclude that the overt acts in question tend to annoy men more than they do women.

Is there any noticeable dissimilarity when like deals with like? That is, do the respective sexes deal more successfully with their own kind? The same set of 437 problems in general pupil attitude yield some evidence on this point. The inquiries as identified with boys and girls and submitted by men and women teachers respectively show that men specifically mentioned boys 40 times and girls 9 times, whereas women spoke of boys 83 times and girls 20 times. Since, in this study, the ratio of participating men to women is 5.4 to 10, the same device, that of ratios, may be employed to indicate the relative frequencies of problems identified with boys and girls respectively. Thus we have the following relationships:

Men teachers : women teachers : : 5.4 : 10
Problems identified with boys—
Number (40) submitted by men teachers : Number (83) submitted by women teachers : : 5 : 10.4
Problems identified with girls—
Number (9) submitted by men teachers : Number (20) submitted by women teachers : : 4.5 : 10

From this, one concludes that there is no particular advantage in having like deal with like—men with boys and

women with girls—in so far as the frequencies of their disciplinary problems are concerned. At this point, the statement by Briggs,[1] that it is probable that the qualities desired in a teacher are much more characteristic of an individual than of a sex, comes to mind. Burton, likewise, speaks of "that vitally conditioning factor, the teacher's personality"[2] in the personal relations of teacher and pupil.

By applying the same sort of inspection to the troubles which teachers experience with pupils in the recitation (Table I, Column 11), one finds a similar situation; the stimulation of the pupil occupies the thoughts of men and women alike. The lazy pupil, late reports, and the "timeserver" who is being kept in school by attendance laws, are frequently mentioned by each sex. Thus, in all their immediate contacts with the pupils, no particular advantage is enjoyed by either men or women.

Such evidence as is here presented causes one to question the validity of the claim that men tone up the administrative situation and, in so far as these findings have any sociological significance, they arouse serious doubts as to the superior effectiveness of male influence over growing boys.

Could this lack of differentiation between men and women have been anticipated? Doubtless it could have been, for the psychological literature which deals with sex differences is in fair agreement that no striking dissimilarities exist. Space will not permit the recounting of titles which are pertinent to this subject,[3] but it is interesting to find experimental evidence supported in a practical situation far removed from the laboratory.

[1]Briggs, Thomas H. *Op. cit.*

[2]Burton, William H. *Supervision and the Improvement of Teaching.* New York, D. Appleton and Company, 1922. p. 45.

[3]The reader is referred to Wooley, Helen Bradford, "A Review of the Recent Literature on the Psychology of Sex," *The Psychological Bulletin*, 7:335–42, 1910; and 11:353 *et seq.*, 1914. Approximately 100 titles are included in these bibliographies.

Finally, an effort was made to determine the number of inquiries submitted to the reporting principals by teachers of each sex, but as the data do not lend themselves to such identification, no available evidence indicates that either sex claims a disproportionate amount of the principal's time. If this test could have been made, additional evidence would be at hand as to the relative abilities of the sexes to cope with their respective problems.

SUMMARY

This investigation affords evidence in support of the following:

1. Men have problems in as great number and of as great variety as do women.
2. The character of the difficulties experienced by each sex is the same.
3. There is no particular advantages in having like sex deal with like.
4. The statement by Briggs, that it is probable that the qualities desired in a teacher are much more characteristic of an individual than of a sex, is supported here.
5. Although a sociological justification for the attempt to interest more men in teaching may exist, there seems to be little justification in school administration, as such, for such effort. In fact, the sociological argument tends to lose its force, in so far as certain findings have sociological significance.

Professor Charles C. McCracken, chairman of the Department of School Administration, Ohio State University, spent the Winter Quarter in Florida.

Tampa is growing rapidly and is now in the process of adjusting its reorganization to comply with the recommendations made by the Survey Commission, which just completed its work, under the direction of Professor George D. Strayer, of Columbia University. Professor McCracken assisted Superintendent Johnston in his reorganization program.

WHAT PRINCIPALS DO WHEN THEY SUPERVISE[1]

E. S. Stauffer
South High School, Columbus

This paper is the result of an effort to determine the amount and kind of supervising done by the junior and senior high-school principals of City X. For this purpose personal interviews were used as a source of information, although in a few cases it was necessary to obtain the information through teachers rather than from the principal. In fact in most of the schools similar information was sought from the principal and one or two teachers. Thus, of the twelve schools considered, eight were reported by the principals and the other four are the best judgment of either one or two teachers. Close agreement appeared between the reports of the principals and teachers in the schools from which both reported. Some teachers were reluctant to answer any of the questions, which may be an indication of poor team work or lack of understanding on the general subject of supervision. Usually the promise that their names would not be used brought forth the desired information.

The following is a copy of the outline used as a basis for the interview, and a summary of the replies:

Question	Summary of Replies	
I. What are your aims in supervising?	1. Improve instruction	10
	2. Teacher rating	2
	3. Collect ideas	2
	4. Report to central office	1
	5. No definite aims	1
	6. Inspiration	2
II. How do you collect data for supervisory purposes?	1. Visitation	10
	2. Conference	7
	3. Through students	7
	4. Other	3
	5. No method	3
III. Do you have a form on which these data are recorded?	1. Yes	7
	2. No	5
IV. How many periods are required to collect the needed data?	1. One	4
	2. Two or more	4
	3. Uncertain	4
V. Do you remain in the class throughout the period?	1. Yes	7
	2. No	3
	3. Varies	2
VI. (A) Do you ever take part in the classroom activities?	1. Yes	10
	2. No	2
(B) If so, under what circumstances?	1. Permission of teacher	5
	2. Request by teacher	1
	3. During general discussion	1
	4. Other	1
VII. What use is made of these data?	1. Conference	9
	2. Teacher rating	10
	3. Report to central office	3
	4. Other	1
VIII. Are these data used for teacher rating?	1. Yes	10
	2. No	1
	3. Not specified	1
IX. What relation is there between classroom supervision and teachers' meetings in your school?	1. Discuss general problems	8
	2. None	4
X. Do you supervise indirectly through department heads?	1. Yes	0
	2. No	9
	3. Very little	3
XI. What is the attitude of the teachers toward supervision:	1. Favorable	11
	2. Unfavorable	1
A. By the principals?	1. Favorable	2
	2. Unfavorable	1
B. By the department head?		

[1]Because of lack of space this article was held over from No. 7, "Studies in the Administration of the High Schools of Ohio," prepared by Dr. J. Cayce Morrison.

XII. Check the items which you specially stress in your supervision.

(a) Scholarship, that is, knowledge of subject and related field	1
(b) Choice of subject-matter	6
(c) Skill in conducting class discussion	8
(d) Appreciation of student ability and individual differences	10
(e) Skill in mechanics of managing a class	2
(f) Teamwork outside of class—committees, extra-curricular	2
(g) Qualities of growth and keeping up to date	7
(h) Personal and social qualities	5
(i) Teaching aims	5
(j) Physical control of classroom	1
(k) Use of tests, examinations, etc.—skill in measuring results	7
(l) Student leadership, that is, ability to develop high ideals	5
(m) Lesson outlines	0
(n) Assignment of new lessons	8
(o) Questioning	7
(p) Class discipline	3
(q) Teaching methods of study (supervised or other)	4

It is no easy matter to put one's finger on the significant elements in the effective supervision of any school. One principal expressed his opinion that the less machinery there was for this purpose the better for the school. Another laughed heartily when approached on this subject; after he had calmed down enough to talk he said, "You cannot get anything of value in this line, because it only exists in literature." Still another lectured for half an hour on the psychology and philosophy of questioning and then asked: "Do you want to know what I think, or what I actually accomplish in supervising instruction?" At the other extreme in City X is the principal who is organizing his clerical and administrative work so that he is released for a maximum amount of classroom supervision. Another said he aimed to visit several classes every day if only for a few minutes. Both of these expressed the hope that the teachers thought of them as sympathetic advisers and not as inspectors. Interviews with teachers in the same schools indicated that their efforts were highly appreciated.

Every interview brought out the fact that clerical, administrative, and disciplinary duties were so heavy that no time was left to give supervision more than passing attention. In several instances it transpired that quite a few items generally considered as purely supervisory were dealt with in an administrative manner. The problem of evaluating replies to various questions must be approached with a thorough appreciation of the individual differences of all the persons involved, including the writer. Let us then consider the various phases under discussion and attempt to evaluate the results in an impersonal way.

Aims.—It seems strange that we do not have a unanimous vote for improvement of instruction as the first and foremost supervisory aim of all principals. Collecting ideas is a meek and yet justifiable aim if these ideas are constructive and will be shared with other teachers. Whether the purpose is to give or to acquire inspiration, it is a worthy aim. "Teacher rating," "report to the central office," and "no definite aim," are perhaps as truthfully stated as any; but, it is a pitiable state of affairs when the principal of a school of from five hundred to one thousand students has no higher aim.

Collecting data for supervision.—Again we have a lack of uniformity, even in applying the most discussed method of collecting data for supervisory purposes, that of visitation of classes. It surely must be possible to provide time, somehow, to do some systematic work of this sort in each of our schools during each school year. Heart-to-heart talks with teachers often give a basis for constructive guidance. Students may, or may not, be a good source of information for the principal. Generally, where there is no method of collecting data there is no supervision.

Forms.—The central office supplies a form for purposes of supervision which does not seem to be used uniformly.

Taking notes before the class is poor practice, but some record should be kept in the principal's office to show what has been attempted and accomplished.

Number of periods.—But one-third of the principals profess to spend more than one period in classroom visitation, or other means of collecting data for supervisory purposes.

The entire period in a class.—No recitation may be judged fairly unless viewed as an entirety. The general class attitude may be measured in two minutes, but it is unfair to criticize destructively or constructively unless the whole recitation and its aims are understood.

The principal's participation in the recitation.—It is justifiable for a principal to take part in an occasional recitation with the permission or invitation of the teacher. Two out of the twelve fail to do so while three of those who do, evidently do so on the strength of their position rather than as a welcome source of help and inspiration. This act offers a unique opportunity to the principal to prove himself a human being as well as an educational leader.

Use of data.—Only nine of the twelve principals follow their visits by conferences with the teachers. Through teachers it is found that those who visit on a rating tour, and in order to fulfil their obligations to the central office, usually leave a bitter taste in the mouths of the teachers. A few minutes in conference would be well spent.

Teacher rating.—Teacher rating as a measure of teacher growth in service after sympathetic supervision is desirable. Otherwise, it smacks too much of spying for the central office. Only a few teachers mentioned this point. They withheld their names with but two exceptions.

Relation to teachers' meetings.—The foundation work of effective supervising may readily be constructed in teachers' meetings. It is difficult in this connection to determine where supervision begins and administration ends.

Department heads.—In the city studied there is no school in which department heads function to any extent. This may be justified by the relatively small size of most of the departments.

Teacher attitude.—The principals universally claim a favorable attitude on the part of the teachers toward supervision by the principal. Some of the teachers qualify this to the extent that they welcome constructive criticisms. The one school that does not seem to favor supervision of this type was reported on by a teacher who declared "adverse criticisms and discipline," "mechanics of classroom management," and "physical control of classrooms" were the main points covered by their principal. Since only three schools claim to have any supervision by department heads and two of the three report a favorable attitude, insufficient data are given to form a fair opinion on this point.

Items specifically stressed in supervision.—The diversity of replies makes it extremely difficult to discuss this part of the report. The best procedure would have been for each principal to check each item, since the best supervising technique, we have, includes an attempt at perfection in all of these. The healthiest sign one sees in this summary is that almost all principals emphasize the students' own problems by checking "individual differences." Another important item is almost entirely neglected, that of teaching methods of study. This may be accomplished partly through the proper assignment of new lessons.

Several additional points added by the principals were (1) character building—which is partly covered by XII-1, (2) the judgment which distinguishes the important from the less important, and (3) the degree of participation by students. Factors which help to reduce the need for close supervision in this system are: first, no junior and senior high-school teachers are hired who have

less than two years of experience and who have not proved themselves worthy members of the profession; second, many of the teachers keep abreast with the newest teaching technique by attending colleges of education during the summer months; and third, many of the teachers in these schools have been employed in the system for many years. On this last point one principal remarked, "I have visited the classes of some of my teachers for over twenty-five years and there is very little supervising I could do if I felt so inclined." There may be a false philosophy involved in this statement; it serves, however, as an excuse for refraining from active supervision.

The outstanding facts discovered in this investigation can be briefly summarized. There is a lack of uniformity in procedure and a lack of agreement concerning the essentials of class activities. There is an evident *laissez faire* attitude among the principals, and an almost uniformly favorable attitude on the part of the teachers toward constructive supervision by the principal. Fairly satisfactory supervisory techniques have been developed and are continually developing. Supervisory practice must keep pace with teaching technique as practiced by the average teacher if supervision is to be respected and welcomed by classroom teachers.

A UNIVERSAL GRAPH RECORD CARD

(*Continued from page 161*)

be shown based on the achievement quotients corresponding to the median scores of the class in the various subjects tested.

The fact that you may not consider the grade norm of a test to be a suitable standard of achievement does not mean that the graph card can be of no help to you. Any standard other than the grade norm would be purely arbitrary, of course, and entirely dependent upon personal judgment as to what the standard should be. You may, if you wish, therefore, raise or lower the grade norms of the tests to suit your particular ideas of what is proper and then follow the procedure already outlined, always dividing the pupil's test score by whatever standard score you may adopt.

Some form of graphic presentation or graphic interpretation of test results is almost a necessity if one is to gain the greatest benefits from a testing program. Furthermore, individual graph records are of far greater value in improving instruction through the use of tests than are class medians, and the improvement of instruction should be the chief aim in any testing program. Unless test data can be presented to both teachers and pupils in a manner that will impress them and help them, the labor and expense of testing are largely wasted. These last dogmatic statements are based upon years of experience in personal supervision of teachers in the work of testing and utilizing test results. I have worked with few teachers who were not enthusiastic supporters of our testing program after they had tried it. But I know that, without consistent and regular graphic representation of the results of educational measurements constantly before teachers, pupils, and parents, my testing program would have failed as other testing programs have failed when not carried on by some special agency, such as a Department of Tests and Measurements, within the school system.

Teachers will not willingly carry on the work long unless they can see and know that it is helping them enough to make all the extra work worth while. And that is why a properly used graph record-card can become the keystone of the most successful and economical kind of a testing program; one where the teachers under the wise guidance of the superintendent and principals, willingly and gladly carry forward the work because they can see that it is really worth the time and effort involved.

EDUCATIONAL READINGS

Seybolt, Robert F. *Notes on the Curriculum in Colonial America*, *JER*, 12:275–81, 370–78, November and December, 1925.

Based upon the information gathered from the files of Colonial newspapers, Dr. Seybolt tells of the teaching of Spanish, Italian, astronomy, bookkeeping, and shorthand at the time. The article closes with a short account of the school equipment of this early period.

Tarr, Alphonso R. *The Business Organization and Administration Course in High School*, *SR*, 34:36-41, January, 1926.

The author of this article states that the development of the science of business and the establishment of courses in business administration by many colleges and universities have paved the way for the introduction into high school of a course which will bring the pupil into close contact with modern business. This course will be managed so that the pupil may sense the duties of men in business and realize something of the seriousness of life's work. Such a course has already been introduced into the English High School, Lynn, Massachusetts. Three general phases of business administration, finance, production, and distribution, have been included in the course. In addition to other means of vitalizing the work, business men told the class about their work. A list of twenty-eight topics which were discussed by these men is presented by the author.

McCall, William A., and others. *Construction of Multi-Mental Scale*, *TCR*, 27:394-415, January, 1926.

In this article the authors present a history of the Multi-Mental Scale, the method of measuring the validity of the test items, and other pertinent information. The scoring key is discussed at length under different headings. The interested reader will discover here an extended technical presentation of the necessary information in connection with this much-discussed measuring instrument.

Mead, A. R. *Suggestions for the Training of Teachers in the Use of Educational Measurements*, *EA&S*, 12:23-43, January, 1926.

As a teacher of the subjects of educational and mental measurements, the writer herein lists the things a teacher needs to know in the field of measurements as follows: (1) A felt need for the study of measurements. (2) A knowledge of the functional way in which the facts about the psychology of learning may be related to the study of measurements. (3) A way to make simple, serviceable score cards. (4) A method of rating pupils by relative positions. (5) The evils of traditional examinations made up of questions of the "easier" type. (6) The use of data from examinations for the purpose of diagnosis and devision of remedial measures.

Suggested methods are offered of successfully teaching these facts to teachers, and a list of the qualifications needed by a teacher of measurements is given.

Snedden, David. *An Unconsidered Source of Criteria of Educational Values*, *TCR*, 27:587-99, March, 1926.

"If courses and curricula for various types of schools are to be derived scientifically rather than intuitively and empirically they must rest upon *validated objectives*. . . . But the value or worth-whileness of any particular type or degree of education is necessarily based on *social values*—either explicitly determined, or, because of custom, implicitly assumed. It is obvious, therefore, that the criteria or standards by which educational objectives are to be validated must be in even more basic ways criteria or standards of social values." Dr. Snedden submits that present-day policies of deriving and validating educational objectives, whether empirical or quasi-scientific, involve at least one fundamental error, that the "herd" type of social organization is no less important than the "team" type as a source of things socially worth while. He cites examples of such "herd" types, and concludes with the statement that a realization of genuinely democratic aspirations for democratic education must be achieved through application of "making the most of each individual," and not through trying to build on false assumptions as to inherent "qualities (entities) of individuals in native powers."

Pierce, F. H. *What about Tardiness?* *SR*, 34:61-66, January, 1926.

In the January issue of the *School Review* tardiness, a troublesome item in school administration, is discussed from the point of view of remedial treatment. A system of checking is presented and illustrated with appropriate cuts. Graphic representations of the effect of employing the system in question are shown.

Gowen, John W. and Gooch, Marjorie. *Age, Sex, and the Interrelations of Mental Attainments of College Students*, *JEP*, 17:195-207, March, 1926.

In regard to age, the authors find that grades and actual chronological age are not closely related. Innate mental ability as an attribute of the individual appears to be the greater force in

Note.—The abbreviations used in this number are: *JER*, Journal of Educational Research; *SR*, School Review; *TCR*, Teachers College Record; *JEP*, Journal of Educational Psychology; and *EAS*, Educational Administration and Supervision.

determining mental attainment. Sex, however, does not present so colorless a situation, since in every case except chemistry the women are markedly better students than are men. The analysis for the separate sexes of the records for the relation of high-school and college work and for the attainments in college work shows that mental ability behaves as an attribute of the individual expressed by this individual uniformly in all of the subjects studied.

IN PAPER COVERS

PENNSYLVANIA SCHOOL JOURNAL. *Special School Buildings Number*, November, 1925. 176 pp.

The special new school-building number of the *Pennsylvania School Journal* contains, in addition to a number of short and interesting articles, a large number of photographs and plans of new school buildings throughout the state.

NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS. *Proceedings of the Tenth Annual Meeting of the National Association of Secondary-School Principals*. Cicero, Illinois, H. B. Church, Secretary, 1926. 260 pp.

The tenth yearbook, as has been the custom of the secondary-school principals' association in the past, contains the texts of the addresses presented before the annual meeting of the association. Child-accounting records, the schemes of student government, and methods of marking received special attention in this yearbook.

OSBURN, W. J. *Reading Difficulties in Arithmetic*. Madison, Wisconsin, State Department of Public Instruction, August, 1925. 4 pp.

That "at least 60 percent" of a pupil's difficulty in solving arithmetic problems lies in his inability to read the problem understandingly is the opinion of W. J. Osburn. The author points out the following causes of misunderstanding: (1) lack of vocabulary, (2) failure to read or see all of the elements in the problem, (3) influence of preconceived ideas, (4) inability to read between the lines, (5) failure to recognize fundamental relations particularly those of the inverse type, (6) failure to make a quick change of mental set, (7) failure to generalize, (8) failure to interpret cues correctly, and (9) responding to irrelevant elements. He also gives valuable lists of cues ordinarily used to indicate which of the four fundamental operations are to be used in the solution of problems.

ORATA, PEDRO T. *Adaptation of Subject-Matter and Instruction to Individual Tests in the Elementary School*. Urbana, Illinois, University of Illinois, 1926. 19 pp. (University of Illinois Bulletin, Vol. XXIII, No. 20, Educational Research Circular, No. 40)

The author proposes to answer four questions: (1) What evidences are valid in convincing us that it is necessary to adapt subject-matter and instruction to differences in interest and capacities of school children? (2) What is the nature of the differences in elementary-school children? (3) What are some of the devices and methods by which a teacher may meet these individual differences? and (4) What criteria should guide a teacher in selecting and in using a particular method or device so that the outcomes of learning and teaching may agree with the ultimate aims of education?

The writer's attitude on these questions is not entirely opposed to provision for individual tests; his endeavor is rather to combat the tendency of many school men to abolish group instruction. He wishes either to establish the extreme of individual instruction or to divide the pupils in groups according to their abilities. He insists on giving every child every opportunity without, however, surrendering the other phase of human development, namely, the virtue that comes out of group life.

BUSWELL, GUY THOMAS, AND JUDD, CHARLES HUBBARD. *Summary of Educational Investigations Relating to Arithmetic*. Chicago, Illinois, University of Chicago, 1925. 212 pp. (Supplementary Educational Monographs, No. 27)

To summarize for the busy school man in two hundred pages the arithmetical investigations made during the last thirty years is a real contribution to educational literature. This monograph is a digest of 320 books and articles the majority of which have appeared since 1892. The material is classified under ten headings. The bibliography is arranged alphabetically by authors, and a brief summary of each contribution is given. A complete index of authors and titles adds to the usefulness of the book.

Teachers, supervisors, research students, all will find this work a saver of time and labor in studying problems related to scientific investigations of methods and results of teaching arithmetic.

BOOKS TO READ

RUGG, HAROLD. *Primer of Graphs and Statistics*. New York, Houghton Mifflin Company, 1925. 142 pp.

Since an extensive use of statistics is made in school reports and school surveys, even the average teacher who does not aspire to be a statistician has need of some familiarity with the definitions and uses made of statistic terminology and methods in educational writing. In this small book Dr. Rugg presents in a most readable manner some of the essential items of statistical information. He tells how to make a frequency table, to plot a frequency diagram, and to plot the graph of a frequency distribution. Measures of central tendency—median, mode, and mean—and measures of variability—quartile deviation, standard

deviation, and mean deviation—are explained and illustrated. The use of the normal curve in allotting pupils' marks is suggested. Methods of reckoning correlations are described. In the final chapter a variety of ways in which teachers may employ graphic devices is illustrated.

WORKS, GEORGE A. AND OTHERS. *Organization and Administration.* Austin, Texas, Texas Educational Survey Commission, 1925. 446 pp. (Texas Educational Survey Report, Vol. I).

Through the eight volumes of the report of the recent survey the State of Texas has assembled one of the most complete appraisals of its educational system which any state at present has. Included within this first volume are chapters on the administration and supervision of rural schools and city schools. Other topics which are discussed are: the teaching staff of the elementary school, health education, the amount of schooling, negro education, state textbook system, and several chapters dealing with numerous problems presented by school buildings. School administrators, even though they do not live in Texas, will find this report of interest.

PARKER, C. S. and TEMPLE, ALICE. *Unified Kindergarten and First-Grade Teaching.* Boston, Ginn and Company, 1925. 600 pp.

The basic principles which apply in the allied fields, the kindergarten and the first grade, are presented in this book elaborated by illustrative lessons, practical plans, and precise technique. The historical background of the first grade and the inspirational contribution of the kindergarten to the present-day unified practice are clearly discussed. A knowledge of child psychology and of the results of recent educational research is utilized in this excellent presentation of kindergarten and primary methods.

TERMAN, LEWIS M. and LIMA, MARGARET. *Children's Reading.* New York, D. Appleton Company, 1926. 363 pp.

The authors define the investigation as "an experimental study of the qualitative and quantitative aspects of children's reading with special reference to individual differences caused by age, sex, intelligence, and special interests." Data regarding the reading interests of approximately two thousand children were obtained from the parents, the teachers, and the children themselves. The list is not so much an enumeration of books which children do read as it is a list of worthwhile books which children would read if given the opportunity to do so. The first part of the book is concerned with the development of reading interests, individual differences, differences in mental ability, sex differences, and the characteristics of desirable and undesirable books. The books are then listed under the following titles: picture books and general literature; poetry, art, music, drama; history, biography, travel; nature; science; and industry. A short list of supplementary reading for schools is also included. In each list certain volumes are starred for the teachers or parents having a limited choice; after each title is given the age range to which the book is best adapted.

RIDGELY, DOUGLAS C. *Geographic Principles: Their Application to the Elementary School.* Boston, Houghton Mifflin Company, 1925. 190 pp.

Within narrow compass practical methods of teaching geography are presented in this small book. Contrary to the usual practice the methods discussed are those which are applicable to geography rather than general methods of teaching. A definite outline of geographic study is included and discussed in detail.

NEED FOR TRAINED TEACHERS FOR PHYSICAL EDUCATION

WITHIN the past few years interest has grown in the promotion of the physical welfare of the boys and girls of this country. The seriousness of the men's health situation was uncovered during the war, when many thousands of men were found physically unfit to serve because of physical defects. The results from a study of the physical examinations of freshmen women entering colleges and universities indicate that a large proportion of women are in equally poor condition.

This situation calls for an analysis of the cause as well as of the remedies suggested, as the need for physically fit men and women is as important in time of peace as in time of war.

Further consideration of the subject shows that, although modern environment affords untold opportunities for intellectual development, it fails to contribute physical development adequate to withstand the nervous strains of twentieth-century civilization. The congestion within towns and cities offers little space for children to play, while at the same time, the lengthening of the school year and the many additions to the school curriculum place children in an artificial medium—artificial because it tends to stimulate a weakened physical condition.

In contrast to these facts, Dr. Clark Hetherington, the well-known exponent of physical education, has stated that children need at least five hours of big-muscle activities if they are to maintain vigorous physical and mental health.

In the administration of health and physical activities in the elementary and secondary schools, modern educators recognize that Nature has long pointed the way to man's proper physical development by endowing him with the capacity to play. But as Nature's method was not recognized until recent years, we failed to provide adequate indoor and outdoor play space; or, having done that, we neglected the absolute necessity of providing proper leadership through a trained director of physical activities. Children have the interest and capacity for physical activities which require guidance to stimulate wholesome play, wholesome physical development, and wholesome mental attitudes.

The increasing demand for trained men and women in this field has induced the College of Education of Ohio State University to establish a four-year professional course leading to the degree of Bachelor of Science in Education. The first class will be graduated in June, 1926. The curriculum is so arranged that a broad general and scientific education is combined with specialized training. The subjects comprising the course fall naturally into four groups:

GROUP I. Includes those subjects general in character, having definite professional value: English, psychology, foreign languages, social sciences, public speaking. Liberal provision is made for electives in this group.

GROUP II. Includes chemistry, zoology, anatomy, physiology, and hygiene.

GROUP III. Includes survey of education, educational psychology, history of education, principles and practice of education, school administration, practice teaching, and electives.

GROUP IV. Includes the professional courses: history and principles of physical education, kinesiology, therapeutic gymnastics, prevention and care of injuries and training, hygiene and school health problems, theory and practice of physical education.

The course in the theory and practice of physical education continues through the sophomore, junior and senior years and aims to familiarize the students with the organization and conduct of the special activities included in physical education. Students are expected to master not only the theory of athletics, gymnastics, and dancing but also to acquire a moderate degree of skill and proficiency in these activities. In the senior year opportunity is given for practice teaching and coaching in the different sports, in connection with the University required courses, the intramural activities and the public schools of the city.

A misconception of the need for properly trained leaders of physical activity often arises from lack of consideration for the educational values which may be gained in the gymnasium and on the playground. Accordingly, men and women who have been prominent in college athletics have been brought into the public schools with the sole thought of developing teams. This type of individual, as a rule, has not received the proper scientific or professional training to enable him or her to organize work of a healthful kind. Hence arises a system of athletics in which little thought is paid to the adaptation of activities to the physical capacities of the individual, for, while attention is focused on the few strongest and most vigorous, the great mass of students is neglected.

In many cases even though the physical education of the boys has been organized, the girls' play life has been slighted or has been directed by a man. Women are unquestionably better able to understand the physical powers and strength of girls and can guide and stimulate them to more wholesome mental attitudes. The physical-education course for women at Ohio State University has appreciated the crying need for trained women leaders of physical education and has encouraged women students who have not only the ability to organize a healthful curriculum of physical education, but also the poise and personality to stimulate wholesome habits of living among children and older girls.